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§ 61. **The Bulletin.**—The next number will begin the fifth volume of our little publication. When that volume closes we purpose issuing an index to the five volumes, so that that portion may be bound. Our subscribers will confer a favor by remitting 12 cents for postage, it being very inconvenient to send our unpaid mail to the general office. For the same reason station D is preferable for money orders.

We take this occasion to reiterate our hope that some of the more wealthy friends of science, to secure the permanency of the Bulletin, will endow it with a publishing fund of three thousand dollars.

§ 62. **The Botanical Directory.**—We tender our sincere thanks to the many friends of the undertaking, who have, by their emendations and suggestions, enabled us to give a much better list of the active botanists of this part of the world than has yet appeared. We have considerably more than doubled the number in the Salem Directory, published some years since. Our list was based on that, and Mr. Putnam most kindly seconded our project. Some of the old names we have not been able to verify, but all the new ones, we are assured, are those of persons really interested in some branch of the science.

It has occurred to us that it would be well in the next edition to append a list of considerable general and special herbaria and libraries, to facilitate references in our wide territory. We solicit contributions of information on these heads, as well as corrections and additions for the Directory proper.

§ 63. **Elliottia racemosa**, Muhl.—At the meeting of the Club, October 28, specimens of *Elliottia* were distributed. These specimens were collected by Mr. P. J. Berckmans, who has discovered a fine locality for the plant not far from his residence near Augusta, Georgia. As the fruit of *Elliottia* is still undescribed, Mr. Berckmans was requested to procure specimens if possible. He writes, on one of the last days of October, that some of the plants are still in flower, but that no vestige of fruit of any kind is to be found. The plant, through the kindness of Mr. Berckmans, will soon be in cultivation, and then we may be able to discover to what this lack of fructification is due.

G. T.

§ 64. **New Publications.**—1. *Prodromi Systematis Naturalis Vegetabilium Historia, Numeri, Conclusio*, by Alphonso De Candolle (from the last vol. of the *Prodromus*), Paris, 1873.—2. *Reflexions sur les Ouvrages Generaux de Botanique Descriptive*, by the same, Geneva, 1873. The former of these pamphlets, as its name implies, is a brief account of the history of the *Prodromus*, of the share of the various contributors to the work, and an enumeration of the genera (5134, *Composit.* 911), and species (58975, *Composit.* 8561) described, a large proportion being newly determined in this great work of three generations. It was begun by Augustin Pyramus De Candolle, who published the first vol. in 1818. The elder De Candolle died in 1841. His son Alphonso carried on the work, with the assistance, as before, of other botanists, among whom was his son Casimir. This year (1873) the last (XVIIth) vol. was published, the whole embracing, after all, only

the Dicotyledons. It was found necessary at this point to bring the undertaking to a close, "*ne tertiam botanicorum generationem occideret!*" The eight genera of Dicotyledons most numerous in species are: Solanum, 915; Euphorbia, 751; Senecio, 601; Croton, 461; Phyllanthus, 447; Erica, 429; Salvia, 410; Peperomia, 389. Next to the elder De Candolle, J. Muller and G. Bentham contributed most, and next to these, C. F. Meissner and Dunal. The last ten volumes contain, in fact, not a mere revision but a complete set of monographs. In the second pamphlet, the author reviews the general works of descriptive botany, which have already appeared, and offers some thoughts on what method is to be pursued hereafter. He recognizes the need of a more profound microscopical study of the structure and evolution of plants, which the advanced state of the science demands. He thinks that, by distributing the task among twenty-five botanists, the Phanerogams, estimated at 110,000 species, might be described in about fifteen or sixteen years. In twenty or thirty years from this time, we shall approximate so nearly to a complete knowledge of flowering plants (at least Dicotyledons) as to make a new description desirable. In the mean time he recommends the publication of good monographs. His father instituted a quinquennial prize of 500 francs for the best monograph of a genus or a family of plants. The next prize will be decreed in September, 1874. The Club is indebted to the distinguished author for these publications.

—3. *Botanical Contributions to the Proceedings of the Am. Acad. of Arts and Sciences*, by Asa Gray; 1873. (1) *Characters of New Genera and Species of Plants*. We have only room to notice: *Aquilegia leptocera*, var. *flava*, Gray, the golden Columbine of New Mexico, etc., recognized as a distinct species with the name *A. chrysantha*: *Pachystima Canbyi*, Giles Co., Va., an addition to our Eastern flora: *Hosackia Torreyi*, first gathered in the Sierra Nevada by Dr. Torrey: *Dirca occidentalis*, California. (2) *Notes on Compositæ and Characters of certain Genera and Species*, etc. Part 1. This is to a certain extent a commentary on Bentham's revision of the order.—4. *Contributions to American Botany*, by Sereno Watson. (1) *New Plants of Arizona*, from the American Naturalist. (2) *On Section Avicularia of the Genus Polygonum*, from the American Naturalist. *P. Torreyi* was gathered by Dr. Torrey in the Yosemite Valley. (3) *Revisions of the Extra-tropical North American Species of the Genera Lupinus, Potentilla and Oenothera*, from the Proc. of Am. Acad., 1873, with copious synonymy and references, an important contribution on very difficult subjects. Dr. Allen's variety *humifusa* (Vid. Bull. Vol. 1. No. 1.) of *Oenothera fruticosa* is maintained. Mr. Watson has taken a place among our leading botanists. The synonymy and references in this contribution present a model of thorough workmanship.—5. *Circulation of Sap in Plants*, by Wm. S. Clark, President of Mass. Agric. Coll., *merst Record*, Wednesday, Dec. 17, 1873; read at Fitchburg, Dec. 2nd. This is essentially an account of some highly interesting experiments and observations, carried on for months, night and day, on a great variety of trees and shrubs, particularly Maples, Birches, and Vines. We hope it will be published in a

form better adapted for preservation and with fuller details. As for the *rationale* of the movement, it has been carefully studied by others, Draper in this country and Sachs, for example, in Germany (confer *Lehrbuch*, 1873), whose investigations are entitled to respect. It is stated that Prof. Agassiz was present at the reading of this paper and gave it his emphatic approbation. His voice was ever prompt to encourage any direct interrogation of Nature, and botanists, as well as others, will miss his powerful influence in favor of science.

—6. *The American Journal* for Nov. and Dec. contains as usual interesting botanical notices by Dr. Gray, particularly on the carnivoracity of *Sarracenia*, *Drosera* and *Dionæa*.—7. In *Nature*, Nov. 20th, Hermann Muller elucidates the remarkable varieties of *Viola tricolor*, in reference to self- or insect-fertilization.—8. *The American Naturalist* regularly devotes a portion of its pages to botanical notes. As cited above, two of Watson's *Contributions* were first published in it. In the December number the Publishers make an earnest appeal for more liberal support. The botanist needs to have some intelligence of what is doing in other branches of Natural History, and nowhere will he find it so accessible as in this handsomely printed and ably edited Monthly. If our readers will follow our advice, every one will subscribe to the *American Naturalist*, the *American Journal of Science and Art*, the *American Agriculturist* and *Nature*.

§ 65. *Chenopodium leptophyllum*, Nutt.—In examining the Chenopodiaceæ in Prof. Eaton's herbarium, I was quite surprised to find a specimen of *C. leptophyllum*, collected by him at Absecon, N. J., "in maritimis." It is not very rare from Colorado to New Mexico and westward, but this is the only Eastern specimen I have seen. I would like to call the attention of Eastern botanists to their collections, to ascertain if it has been gathered elsewhere.

It is readily distinguishable—quite farinose, erect, slender, somewhat strict; the leaves all linear, entire and short-petioled; the flower and seeds smaller than in *C. album*, from which it may also be at once known by the pericarp's readily separating from the seed, on rubbing between the fingers, leaving it smooth and shining. I would like to see the species confirmed as an Eastern one.

I would also like to ascertain whether *C. Boscianum* (*C. album*, var. *Boscianum* of Gray's Manual, excluding synonym *C. Borlandieri*), has been found north of Pennsylvania. It ranges west to Kentucky and Texas.

*C. album*, *C. Boscianum* and *C. Borlandieri* are all good species.

BOTANIC GARDEN, CAMBRIDGE, Oct. 27, SERENO WATSON.

§ 66. *Fertilization of the Yucca*.—Dr. Englemann communicated to the *Bulletin* some months ago, the interesting fact that the flowers were so constructed that self-fertilization was well-nigh impossible and, further, that impregnation was accomplished through the agency of a small night-moth, *Pronuba Yuccasella*. In connection with this subject, it may be interesting to note that, when making botanical collections in the Rocky Mountains of Colorado in 1871, I found the *Yucca angustifolia* producing seed abundantly everywhere. During my explorations the past season, though the plants were frequently met with, I did not find one single pod of seed, though